FIRE ALARM SERVICE
(Community Dial Systems)

CONTENTS

1. GENERAL

1.1 This section is intended to provide REA borrowers, consulting engineers, contractors and other interested parties with technical information for use in the design and construction of REA borrowers' telephone systems. It discusses in particular the considerations for establishing fire reporting service in areas served by unattended dial central offices. This revision discusses the fire reporting systems usually furnished to REA borrowers at the present time.

1.2 At one time the National Board of Fire Underwriters did not favor the use of commercial telephone systems as a means of establishing a fire reporting service. In recent years it has been recognized that modern telephone systems provide a ready and convenient means for reporting fires and the telephone companies have been encouraged to cooperate in setting up the procedures.

1.3 There are a number of different arrangements available for establishing a fire reporting system. The Underwriters prefer a system having a fire reporting station attended by responsible persons and available for receiving reports of fires 24 hours a day.

2. TYPICAL FIRE REPORTING SYSTEMS

2.1 One such preferred system has the central fire station attended at all times. Two telephones are usually provided at the attended location, neither of which need be equipped with a dial. One telephone (called) is used exclusively for receiving reports of fires and is connected only to a connector terminal and not to a line equipment at the dial central office. This telephone rings whenever the listed fire number is dialed. The second telephone (calling) is connected directly to the fire conference circuit at the dial central office and is used exclusively for calling the volunteer firemen at their homes via their regular home telephones. Please refer to Figure 1, X-wiring, for a schematic diagram of this fire reporting system. These two telephones can be multipled to two or more locations if desirable, such as an all-night restaurant, hotel, fire chief's home, etc.

2.2 The system is usually arranged so that up to ten firemen can be connected to the conference circuit. It is recommended that each fireman have a private line to reduce ringing and transmission losses. Where there are six or more telephones connected to the fire conference circuit, a conference amplifier should be installed to maintain a satisfactory level of voice transmission.

2.3 When the handset of the calling telephone at the fire station is removed, a continuous ring is placed on each fireman's regular home telephone until answered, if his telephone is not in use. If his telephone is in use, it may be switched automatically to the fire conference circuit without warning, or as an option, a distinctive warning tone may be given. Upon hearing the warning tone, the fireman depresses his hookswitch momentarily and is automatically connected to the fire conference circuit.

2.4 Any fireman may release from the fire conference circuit as soon as he has sufficient information by merely restoring his handset. His telephone is then available for regular calls. The attendant at the fire station releases the entire conference circuit when he restores the handset to his conference telephone.

2.5 A grounding push button may be furnished at the fire station to start a siren. This is an optional feature and is a means of alerting firemen who are not at home, but are in the immediate area when a fire is reported. Firemen away from home and hearing the siren can call the fire station by way of a connector access and obtain information concerning the fire. The siren should be equipped with a control mechanism to cut it off automatically after a timed interval, which is adjustable between a few seconds and several minutes.

2.6 Another optional feature is a supervisory lamp panel at the fire station, arranged to light a lamp for each fireman's line when the fireman answers. This indicates to the attendant which firemen have answered the fire conference call.

2.7 A second and popular method is shown in Figure 1, Y-wiring. It provides a directory number which, when dialed by the person reporting the fire, directly operates the fire conference circuit at the community dial office. This signals the regular home telephones of all the firemen by means of a continuous ring until answered. If a fireman's telephone is busy on a regular call, the fire conference circuit can be arranged to effect an immediate transfer to the conference circuit without warning. Or, as an option, a distinctive warning tone may be given to the busy telephone. In the latter case, the fireman depresses the hookswitch momentarily and is then connected to the fire conference circuit. Each fireman should have a private line to reduce ringing and transmission losses. It is recommended that not more than ten telephones be assigned to the conference circuit and that a conference amplifier be installed where there are six or more telephones in order to maintain a satisfactory level of voice transmission. Grounding push buttons may be installed at one or more of the firemen's telephones for starting a siren. The siren should be equipped with a timing control as described in Paragraph 2.5. This method may have a disadvantage in that there is a possibility of calls from misguided persons for the sole purpose of causing mischief. It also may be confusing when several persons answer a fire call and subject the calling party to a number of questions.

3. RINGING LOAD CONSIDERATIONS

3.1 A fire alarm system, with sometimes ten or more telephones in the homes of firemen which must be rung simultaneously with a continuous ring, tends to place a burden on the ringing machine in the central dial office which must be considered. Refer to TE & CM-212, "Ringing Systems," for information concerning the selection of a ringing machine with adequate capacity to handle the load.

4. ASSIGNMENT OF FIRE REPORTING NUMBERS

4.1 Special emphasis should be placed upon proper directory listings and fire reporting information.

4.11 Preference of Numbers - For each of the above types of service, there should be a number assigned for fire reporting purposes only. The number should preferably be one which may easily be remembered, such as 3131 and similar combinations. Numbers such as 1111 and 2222 should be avoided because of the tendency to force the dial.

4.12 Directory Introductory Information - Information in the introductory pages of the telephone directory should include brief instructions regarding how to make emergency fire calls. Where a single fire department serves the entire area covered by the telephone directory, it should list the number of that department. If the telephone directory covers an area served by more than one fire department, the instructions should suggest that the directory user enter the telephone number of the fire department serving his area in the space provided. The instructions should also advise the user that in any case the operator may be dialed or called and asked for a connection to the fire department, and that the calling party, if unable to remain at the telephone, should tell the operator where help is required.

4.13 Alphabetical Listings - In all cases the number should also be listed under "FIRE DEPARTMENT" in the alphabetical section of the telephone directory.

4.14 Reserving Fire Reporting Lines - For small communities only one telephone line need be reserved exclusively for fire calls, but for larger communities at least two lines and as many more as may be required should be reserved.

4.15 Special Notice Cards - Where the area covered by a telephone directory is served by more than one fire department, it may be desirable that the fire departments distribute cards to homes and places of business listing the number of the fire department to be called.

4.16 Other Fire Department Lines - In addition to the reserved central office lines, sufficient other lines should be provided to care for the usual department business. Where such lines are provided, the directory listing should appear as follows:

FIRE DEPARTMENT

To report a fire _____
Number

FOR ALL OTHER PURPOSES _____
Number

4.17 Use of "Fire Call Only" Lines - The same number should not be used for both fire reports and other purposes. The fire alarm operator, or other person designated by the fire department to receive reports of fires, should refuse any call, other than a fire report which comes in over the "fire call only" lines, and should notify the party calling to use the other department number.

5. LIABILITY

5.1 Owners of telephone systems providing any type of telephone or leased wire facilities to a city, town, or community for fire or police reporting services should take every precaution to protect themselves from damages. The borrower's attorney should be consulted in working out appropriate arrangements.

6. CONTRACTUAL ARRANGEMENTS

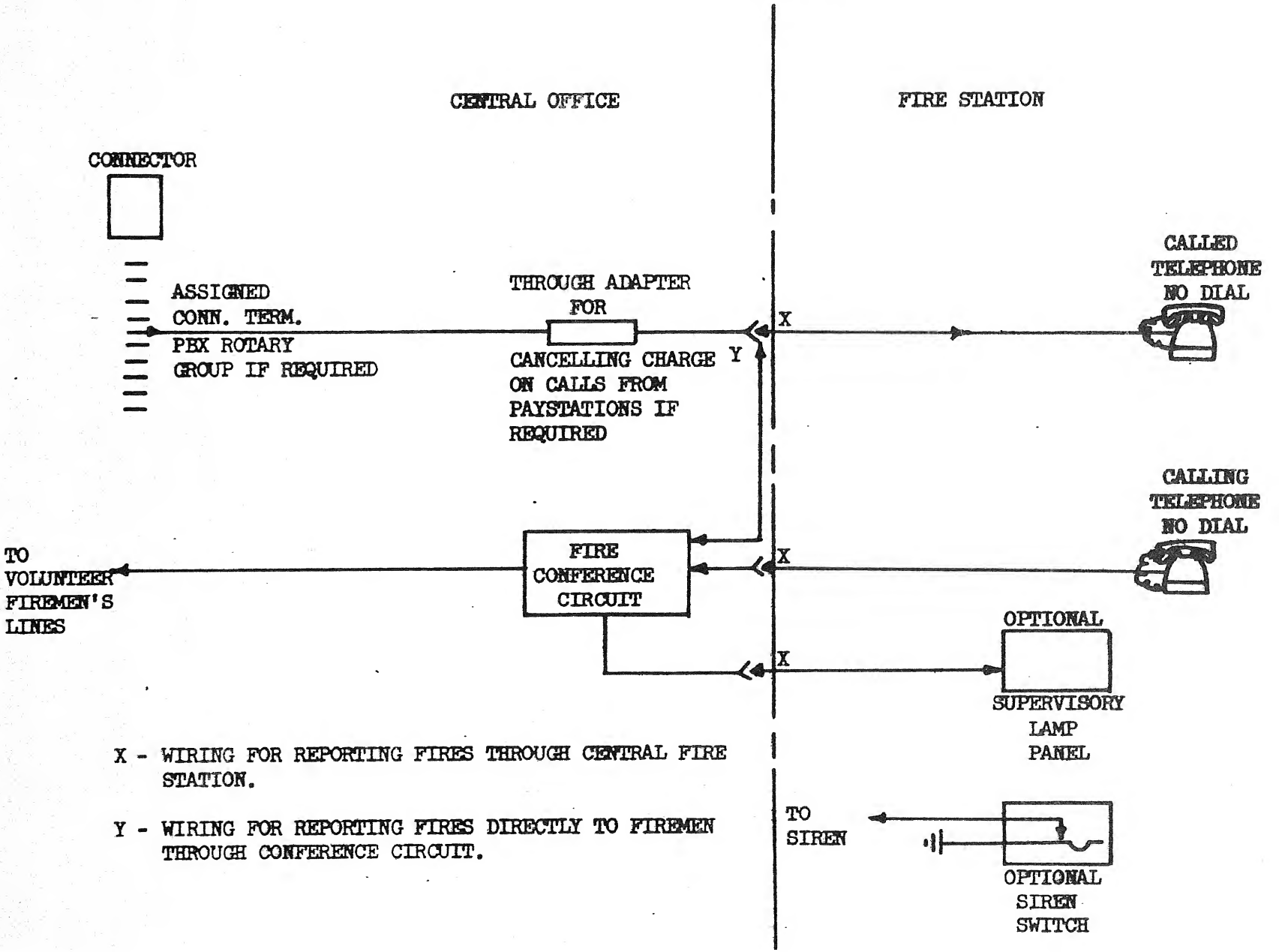
6.1 Many types of contractual arrangements have been entered into for such fire reporting facilities. This service is generally one for negotiation between the borrower and the appropriate authorities. Securing a franchise may depend upon the ability of a borrower to provide such service at a reasonable cost. Borrowers should seek legal counsel in this matter.

7. SPECIAL FEATURES

7.1 There are many devices available on the market that may be used in conjunction with the basic systems outlined in this section. The use of such additional refinements is primarily controlled by the economic status of the community to be served and the compensation offered.

FIGURE 1

FIRE REPORTING SYSTEM



X - WIRING FOR REPORTING FIRES THROUGH CENTRAL FIRE STATION.

Y - WIRING FOR REPORTING FIRES DIRECTLY TO FIREMEN THROUGH CONFERENCE CIRCUIT.